

REMARKS

This communication is in response to the Office Action mailed December 26, 2007 in which claims 1-25 were pending and were rejected. Further, this communication follows an interview conducted on March 14, 2008 between Applicant's representative Chris J. Volkmann and Examiner Rutland-Wallis. During the Interview, independent claim 1 and the cited references were discussed.

With this Amendment, claims 1-12 have been amended and claims 13-25 have been cancelled. Further, new claims 26-38 have been added. For at least the reasons that follow, reconsideration and allowance are respectfully requested.

Claims 1-8, 10-23, and 25 were rejected under 35 U.S.C. 103(a) as being unpatentable over Willis (U.S. Pat. No. 6,225,797). Further, claims 9 and 24 were rejected under 35 U.S.C. 103(a) as being unpatentable over Willis in view of Ngo (U.S. Pat. No. 6,525,515). Herewith, claims 13-25 have been cancelled rendering the rejections of these claims moot.

Amended independent claim 1 provides a controller for a device including a connector for plugging the device into a source of energization and unplugging the device from the source of energization. The controller includes an impedance having a current input, an impedance control input, and a current output coupling to the device. As claimed, an impedance control circuit comprises a first timer and a logic input coupling to the second contact of the connector. An impedance control output of the impedance control circuit is connected to the impedance control input of the impedance and forces the impedance OFF during a first time interval controlled by the first timer which is triggered by the device being plugged into the source of energization. The logic output from the source enables a limited inrush at the current input during a second time interval controlled by a second timer.

Willis discloses a power supply including a circuit having a transistor (i.e., transistor 24) that operates as a switch between a power source 22 and a load 26 (see FIG. 1; col. 5, ln. 25-36). A MOSFET controller 50 coupled to the power source 22 provides logic from controller 48 to operate transistor 24 and provide power to the load. As illustrated in FIG. 1 of Willis, controller 50, which operates transistor 24, is coupled to the power source 22 to receive

logic commands provided from terminal 46 (see col. 5, ln. 47-67). Further, at page 5, lines 57-59, Willis states that MOSFET controller 50 is directly coupled to controller 48 to receive the logic commands. In either case, the MOSFET controller 50 and/or transistor 24 does not include contacts for plugging a device into a source of energization. Thus, although Willis may disclose a power supply for providing power to a load, Willis does not teach or suggest a connector for plugging a device into a source of energization and unplugging the device from the source of energization as claimed. In contrast to Willis, aspects of concepts described in the present specification relate to a connector for hot-plugging a device into a source of energization, in one example. As described in one instance at page 2, line 22 – page 3, line 9, in one embodiment, an impedance control circuit ensures that energization is not applied to the device while the connector is in the process of being mated. Willis simply discloses a power supply having a switch and current limiting circuit and does not discuss concepts relating to plugging and unplugging a device as claimed.

Further, Applicant has amended independent claim 1 to clarify that the impedance control circuit comprises the first timer and that the impedance is forced OFF during “a first time interval controlled by the first timer which is triggered by the device being plugged into the source of energization” (emphasis added). For the reasons that follow, it is respectfully submitted that Willis also does not teach or suggest these features.

First, Applicant respectfully submits that Willis does not teach or suggest a “timer” or “time interval” as claimed. Instead, the alleged timer (i.e., controller 48) in Willis simply operates a transistor as a switch using a control signal from the controller (see col. 5, ln. 63-67). Nowhere does Willis disclose that controller 48 is, or includes, a timer. The controller 48 of Willis simply provides control signals to electrically couple and decouple the load from the source and does not disclose measuring time. It is submitted that Willis does not teach or suggest “forcing the impedance OFF during a first time interval controlled by the first timer” (emphasis added) as specifically recited in claim 1.

Additionally, as illustrated in FIG. 1 of Willis, the cited controller 48 is provided on an input side of the power source 22 that is opposite the alleged connector. Thus, in addition

to failing to disclose a timer as claimed, Willis also clearly does not teach or suggest an impedance control circuit comprising a timer where the impedance control circuit has an input coupling to a contact of the connector as claimed.

Further, in addition to the first timer it is noted that claim 1 also recites a second timer and a second time interval. Willis does not disclose a timer and does not teach or suggest “enabling a limited inrush at the current input during a second time interval” as claimed. Instead, the alleged second timer and second time interval of Willis (i.e., the time constant associated with item 58; see col. 7, ln. 55-60) is a drain capacitor that controls a gate of transistor 24. As stated in Willis, as “drain capacitor 58 charging current decreases, MOSFET 24’s gate charge current...is restored and MOSFET 24 turns on fully” (see col. 7, ln. 53-56). In other words, circuit 54 and capacitor 58 of Willis operate to control transistor 24 based on charging and drain current (see also col. 7, ln. 13-67) at transistor 24 and do not operate based on logic output from a source. Thus, Willis also does not teach or suggest “logic output from the source enabling a limited inrush...during a second time interval controlled by a second timer” (emphasis added) as recited in claim 1.

Further yet, in addition to failing to disclose a timer or a time interval, Willis also does not teach or suggest a time interval controlled by a timer which is triggered by the device being plugged into the source of energization. While Willis may disclose a controller for providing a logic level command for operating a transistor as a switch, Willis clearly does not discuss plugging or unplugging a device from a source of energization and does not teach or suggest a timer triggered by a device being plugged into a source of energization as claimed.

For at least these reasons, it is respectfully submitted that independent claim 1 is neither taught nor suggested by Willis and is in allowable form. Further, it is submitted that related dependent claims 2-12 are also in allowable form at least based on their relation to independent claim 1. Additionally, it is believed that at least some of these dependent claims recite features that are also neither taught nor suggested by the cited references.

For example, dependent claim 4 recites that the first timer is coupled to the current input of the impedance and to the impedance control output of the impedance control

circuit. The first timer provides a first timer output that forces the impedance OFF during the first time interval. In contrast, Willis discloses a controller that provides a command for operating a transistor but does not disclose a timer as claimed. Further, in Willis the alleged timer (controller 48) is on an input side of the power source 22 that is opposite the alleged connector (MOSFET controller 50 and transistor 24). Thus, as can be seen in FIG. 1 of Willis, the alleged timer does not couple “to the current input and the impedance control output” or provide a timer output that “forces the impedance OFF during the first time interval” as claimed.

Further, dependent claim 9 recites “wherein the first timer resets automatically when the connector is disconnected from the source of energization.” As discussed above, Willis does not discuss connecting or disconnecting a device from a source of energization. Willis clearly does not teach or suggest resetting a timer when a connector is disconnected as claimed. Further, Applicant respectfully disagrees with the assertion in the Office Action that Ngo discloses this feature. The cited section of Ngo (i.e., timers 57 and 55) provide timers that are coupled to external impedances Z1-Z3 for programming time constraints and selecting said impedances. Further, a restart timer is provided for resetting and restarting circuits. Nowhere does Ngo suggest resetting either timer based on a disconnection.

Further, dependent claim 10 recites “wherein the first timer is triggerable by voltage transients at the current input.” As stated above, Applicant respectfully disagrees with the assertion in the Office Action that Willis discloses a timer as claimed. Further, the alleged timer in Willis is not “triggerable by voltage transients at the current input.” As recited in claim 1, the current input is a current input of the impedance. Reviewing FIG. 1 and the associated portions of the Willis reference, it can clearly be seen that the alleged timer is on a side of power source 22 opposite the alleged connector. The alleged timer of Willis is not coupled to a current input of an impedance or triggerable by voltage transients at a current input of an impedance.

It is noted that these are examples of dependent claims that are believed to be independently patentable.

New Claims

New independent claims 26 and 33 have been added. It is respectfully submitted that independent claims 26 and 33 are neither taught nor suggested by the cited references and are in allowable form. Further, it is submitted that new dependent claims 27-32 and 34-38 are also in allowable form at least based on their relation to claims 26 and 33.

Conclusion

In view of the foregoing, it is respectfully submitted that all pending claims, namely claims 1-12 and 26-38 are in condition for allowance. Reconsideration and allowance are respectfully requested.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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